

**MINERALS MANAGEMENT SERVICE  
RIK PILOT PROJECTS  
PRELIMINARY DESIGN OF THE WYOMING PILOT**

**INTRODUCTION**

This document describes the Minerals Management Service's (MMS) preliminary design plans to implement a royalty in kind (RIK) pilot project for crude oil produced from Federal leases in the State of Wyoming. The purpose, objective, project framework, and detailed structure of the Wyoming Pilot are presented. Several options to address unresolved issues are also outlined.

The purpose of this document is to provide MMS and Wyoming senior management with the information necessary to make decisions on the nature of the Pilot, including interim consensus to proceed. Final approval will be sought before actual implementation.

The information presented below culminates the preliminary design phase of the Wyoming Pilot. During this phase, the RIK Team surveyed Wyoming crude oil markets, compiled baseline production and royalty information, developed the project parameters, and held a public meeting. The information was generated by MMS' RIK Implementation Team, with assistance from State of Wyoming personnel.

The Wyoming Pilot is one of three projects being undertaken by MMS to explore the potential for RIK programs to improve the Nation's mineral royalty management systems. These projects intend to identify those circumstances under which RIK programs will likely be successful. The results will form the basis for subsequent MMS decisions on whether and where to implement RIK programs more broadly as a steady-state component of the U.S. royalty management system. The RIK pilot projects are:

- Wyoming Pilot: Crude oil project with the State of Wyoming
- Offshore 8(g) Pilot: Natural gas project with the State of Texas
- Offshore Pilot: Large-scale natural gas project

MMS is undertaking this project as a joint endeavor with the State of Wyoming. The State has assisted greatly in the development of the preliminary design described in this document. MMS will brief State officials and seek a consensus on the project's design. MMS regards the State as a full partner in the development and implementation of this pilot project. MMS will not implement this project without the full support and involvement of the State.

## **WYOMING CRUDE OIL MARKETS**

The first task undertaken in the preliminary design phase of this project was to survey the markets for Wyoming crude oil. The purpose of the survey was to understand Wyoming crude oil production/marketing so that the project can be developed intelligently. The team met with marketers, refiners, and producers of Wyoming crude oil to discuss: 1) production volumes, qualities, and locations; 2) pipeline transportation; 3) trucked transportation; 4) refineries; 5) major purchasers; and 6) markets. The full market survey exists as a separate document.

**Production Summary.** A total of 12,710 royalty barrels/day (bbls/day) is produced from Federal leases in Wyoming. Attachment 1 summarizes production information. The U.S. is the second largest "producer" of Federal crude oil in Wyoming. The producers of Wyoming crude oil are shown in Attachment 2. The majority of Federal production is produced from two basins:

- Bighorn Basin: Federal production equals 4,420 bbls/day or 35% of Federal royalty volumes in the State. Crude oil is almost entirely Wyoming asphaltic sour, with an average gravity of 22 degrees and 3% sulfur.
- Powder River Basin: Federal production equals 4,446 bbls/day or 35% of Federal royalty in the State. Crude oil is approximately 60% Wyoming sweet crude, with an average gravity of 40 degrees with little sulfur, and 40% Wyoming general sour, averaging 24.4 degrees gravity and 2.5% sulfur. Powder River Basin production becomes predominantly sour towards the northern portion of the Basin.

**Transportation Summary.** Approximately 75% of Wyoming crude oil is transported away from the lease by pipeline, with the remaining volumes, mostly from marginally-producing leases, moved by truck. The Bighorn Basin pipeline grid moves crude oil north to refineries in the Billings, MT area, and south to the Casper and Guernsey areas prior to further movement to refineries in Wyoming, Salt Lake City, Denver, and, to a minor extent, the Midwest markets. Powder River Basin movement of crude oil is to the south mostly to the Guernsey/Fort Laramie areas for further movement to refineries mostly in Wyoming and the Denver and Salt Lake City areas. Most pipelines move both sweet and sour crude oil, in separate batches.

Crude oil movement to Midwest markets in Kansas and Illinois occurs through the Platte Pipeline which runs from Casper to Wood River, Illinois. The Platte Pipeline has a capacity of 120,000 bbls/day, and is typically full with mostly Canadian crude oil.

The Rocky Mountain region has a refining capacity of some 500,000 bbls/day, enough capacity to refine current production in the Rockies. Almost all Rocky Mountain crude oil is refined in the area, with only a minor amount transported to Midwest markets via the Platte Pipeline.

**Market Summary.** The Rocky Mountain crude oil market is a regional market currently characterized by abundant supply with limited ability to physically move volumes to other markets. Crude oil supply for the regional refining centers in Wyoming, Billings/Great Falls, Salt Lake City, and Denver comes not only from local producing fields in Wyoming, Montana, Colorado, Utah, North Dakota, and Colorado, but also from prolific sources in Alberta. Some 220,000 bbls/day of Canadian sour crude currently moves to the Casper area, with only about 100,000 bbls/day exiting the region via the Platte Pipeline. Perhaps more importantly, the total capacity to move Canadian crude into the Rocky Mountain region is a prodigious 370,000 bbls/day, a prospect that increases the appearance, and thus reality, of a buyer's market for crude oil. All of the marketers told MMS that current margins are quite tight.

The influx of Canadian sour crude has especially weakened the regional market for Wyoming general sour and Wyoming asphaltic sour, for obvious reasons. The market for Wyoming asphaltic sour has been particularly hard hit this winter due to the highly seasonal nature of the asphaltic crude market, combined with disruptions in southerly transportation in the Bighorn Basin crude that act to constrain movement of local crude while Canadian crude continues to move. Refiners are in the dominant position, and asphaltic prices in the \$6 to \$7 dollar/bbl range are the result. MMS has been told that prices for Wyoming sweet have also been negatively affected by the influx of Canadian sour crudes because refiners of sweet crudes in the Salt Lake City area are now increasingly using these low-priced sour crudes for blending.

The limited physical movement of crude oil out of the region does not by itself constrain the ability of marketers and producers to trade or exchange Rocky Mountain crudes at market centers like Cushing, Oklahoma. This type of trading is fairly common in the Wyoming sweet market, however, the weakness in Rocky Mountain crude prices greatly limits the value of crude for exchange. MMS was told that trading or exchanging Wyoming sour crudes in the Midcontinent market centers is not particularly common.

**Conclusions.** The information gathered on Wyoming crude oil markets during the market survey phase of the Wyoming Pilot leads us to make the following conclusions:

- The region is long on supply relative to demand, thus creating a buyer's market.
- The capacity and potential exist for additional influx of Canadian crude into the Rocky Mountain crude oil markets .
- There is little physical movement of Rocky Mountain production out of the region.
- There is an established trading relationship - and thus a valuation relationship - between the Rocky Mountain and Midcontinent markets for sweet crudes.

- The relationship between Rocky Mountain and Midcontinent markets for sour crudes is more tenuous.
- Value is predominantly referenced in relation to local posted prices, although Cushing postings and spot prices may be used for sweet crudes.
- Due to significant market weakness, margins to be gained in the midstream market for Rocky Mountain crude oil are very slim. However, most marketers express substantial interest in bidding to purchase and market Federal volumes.

## **CONCEPTUAL FRAMEWORK OF THE PILOT**

**Objective.** The objective of the Wyoming Pilot is to conduct a realistic test of various methods of taking crude oil in kind in a manner that is at least net revenue neutral compared to current royalty receipts. MMS intends to isolate and test the many factors that could lead to RIK program success and/or failure so that future decisions on broad RIK implementation can be well informed. Such factors include:

- Production volumes - overall
- Production levels from individual properties
- Production-quality: sweet, sour, and asphaltic sour
- Lease location
- Transportation type: trucked and piped production
- Imbalance procedures
- Reporting and verification procedures
- Sales methods: Lease sales and marketing agent

The project will include sufficient volumes and properties (see below) to simulate broad RIK implementation. The project is intended as an objective, realistic test of the RIK concept applied to a wide array of properties and conditions.

The desired outcome of the project is the compilation of focused data on crude oil RIK to support future decisions, while at least preserving current levels of royalty revenue. Although the primary objective is to gather data, MMS will not conduct any phase of the Wyoming Pilot if economic analyses of purchase bids or marketing agreements indicate that a revenue loss compared to current receipts would occur.

**Scope.** The Wyoming Pilot will initially run for a 2-year overall term, extendible and expandable, based on indications such as proven successes, State needs, public comment, and data requirements.

MMS will take roughly 2,000 Federal bbls/day from the Bighorn Basin and another 2,000 Federal bbls/day from the Powder River Basin, a total that comprises some 45% of royalty production in each basin and approximately one-third of total Federal crude oil royalty volume in Wyoming. The State may also include RIK volumes from State leases, if desired. MMS will take all three major types of Federal crude in Wyoming, specifically:

- General sour: Approximately 1,000 bbls/day
- Asphaltic sour: Approximately 2,000 bbls/day
- Sweet crude: Approximately 1,000 bbls/day

**Regulatory Factors.** Among other factors, MMS intends to test the ability and feasibility of marketing agents to manage and sell royalty volumes in this project. The Mineral Leasing Act (MLA), in combination with the lease contracts, does not limit Federal authority to retain marketing agents for this purpose. However, the Department believes that a regulation is needed

to provide for public notice and comment and to clarify the Department's interpretation of the MLA's provisions for disposition of royalty volumes. The rule will also address lessee/operator responsibilities under Federal RIK.

MMS is currently developing such a regulation, which will also address disposition of offshore in kind production. Publication of a final regulation is anticipated by early 1999, after the start of the project in October 1998.

**Project Phases.** Attachment 3 outlines the primary phases of the project, although this may change depending on State of Wyoming input. The preliminary design phase concludes with briefings based on this document. The following phases are identified based on the preferred option described below under "ISSUES AND OPTIONS FOR RESOLUTION":

- **Detailed Project Design:** Starts with any changes to preliminary design from Wyoming input. Includes compilation of detailed lease and economic data, bidding and/or procurement activities, testing of reporting/verification systems, and lessee/operator contacts. April - October, 1998 (for Phase 1). June - October, 1999 (for Phase 2).
- **Phase 1 (Draft):** Royalty volumes may be offered for lease sales under a bid structure designed to be market sensitive and test aggregation effects. October 1998 - September 1999.
- **Phase 2 (Draft):** Three marketers may be procured (one for each of the three grades of Wyoming crude oil) to sell Federal crude oil royalty volumes for a one year term, extendible to a 2-year term. October 1999 - September 2000 (perhaps 2001).
- **Project Evaluation:** Project results will be evaluated to identify factors leading to project success. Two to four months after Phase 2 concludes.

Phases 1 and 2 will be applied to the same leases in different time periods. The team considered concurrently conducting lease sales and marketing agent sales for different leases but decided against such an approach. The team believes that comparing results from the two methods applied to the same properties in two contiguous time periods is less problematic than comparing results of the methods in the same time period but for different properties. Further, concurrent testing of both sales methods would require taking virtually all of Wyoming crude oil in kind, a project larger than possible with current resources.

### **DETAILED STRUCTURE OF THE PILOT**

**Properties Selected.** The 4,000 bbl/day scope of the project was chosen as a balance between providing sufficient volumes to generate marketer interest without involving so many properties that the project would be more like a steady-state operation than a pilot project. In selecting properties to reach the volume goals of 1,000, 2,000, and 1,000 bbls/day for sweet, asphaltic sour, and general sour, respectively, we included an array of the following attributes:

- o Large-producing properties: >80 bbls/day royalty volume
- o Mid-size producing properties: 20 to 80 bbls/day royalty volume
- o Marginal producing properties: <20 bbls/day royalty volume
- o Leases and pooling agreements
- o Pipeline properties
- o Trucked properties
- o Standard and low royalty rate properties
- o Diverse geographic locations within the basins
- o Single and multiple funds distributions from a single property

Based on these attributes, we selected 174 properties (lease or pooling agreements) accounting for approximately 10% of the 1708 Wyoming properties in the two basins. These properties include 556 leases (20% of all the basins' leases) and 61 operators (out of the 266 total operators). Attachments 4, 5, and 6 identifies the properties selected. The following summarizes salient characteristics of the properties selected for the project:

Attributes	Number of Properties		Royalty Bbls/Day	
	Pilot (%)	Basins (%)	Pilot (%)	Basins (%)
Large Producing Properties	14 (8%)	22 (1%)	2703 (65%)	4711 (53%)
Mid Producing Properties	27 (16%)	54 (3%)	1019 (25%)	1839 (21%)
Small Producing Properties	133 (76%)	1632 (96%)	395 (10%)	2316 (26%)
<b>Totals</b>	<b>174 (100%)</b>	<b>1708 (100%)</b>	<b>4117 (100%)</b>	<b>8866 (100%)</b>
Pipeline Properties	78 (45%)	180 (11%)	3767 (91%)	6738 (76%)
Trucked Properties	96 (55%)	1528 (89%)	350 (9%)	2128 (24%)
<b>Totals</b>	<b>174 (100%)</b>	<b>1708 (100%)</b>	<b>4117 (100%)</b>	<b>8866 (100%)</b>

**Point of Delivery.** The operator of each Pilot property will deliver the royalty volume in marketable condition to the purchaser or marketing agent at the royalty meter designated by the Bureau of Land Management for each lease. The volume will be the entitled royalty percentage as stated in the lease or the applicable reduced royalty rate current as of the start date of the Pilot project.

For trucked properties, royalty oil will be delivered to the purchaser only when a trucked delivery occurs, even if such trucking occurs less often than monthly. The purchaser will either take delivery at the tank for his own further downstream trucking or will negotiate terms with the operator and/or existing trucking company for downstream delivery.

**Imbalances.** Procedures for settling production imbalances will be outlined in the Federal RIK rulemaking expected to be final early in 1999. The RIK Implementation Team had at first planned to negotiate agreements with each operator before the rule is published, but public comment indicated that there is little need for such agreements, especially considering that current regulations address the provision and metering of royalty volumes.

Because U.S. crude oil will be delivered directly to the purchaser or marketing agent at the royalty meter on the lease, imbalances are expected to be minimal. However, there are two types of potential imbalances: 1) differences between volumes reported by the operator as transferred to the purchaser or agent; and 2) differences between the volume actually delivered and the volume required by the lease to be delivered. Resolution of the former is discussed below under "Reporting and Verification". Regarding the latter, the operator is required to maintain records supporting the allocation of volumes among working and royalty interests. BLM and MMS will sample such records during the Pilot and will resolve any imbalances directly with the operators through volume adjustments in ensuing months. Final settlement of outstanding volume imbalances will occur during the last month of the project. Any imbalances due to the last month's deliveries will be negotiated for a subsequent in value resolution.

MMS will send out a "Dear Operator" letter before the Pilot to 1) inform the operators that their properties are in the project, 2) provide parameters for imbalance resolution and other operator responsibilities during the Pilot; and 3) begin a dialogue with each operator. A joint meeting with operators may be held prior to initiation of Phase 1 of the project.

**Sales Methods.** Although the final pilot design will incorporate input from the State, the preliminary design envisions the use of two methods to manage and sell royalty volumes, lease sales and marketing agent sales. [Options to this preferred approach are arrayed below]

1. **Lease Sales.** The first phase of the Wyoming Pilot may use this approach. Three bid packages would be offered, one each for sweet, general sour, and asphaltic sour volumes. Bids would be requested for each property in each package. Companies would be able to bid on any number of properties, with property-specific bids. MMS would also request bids on each of the three RIK packages, to test the effect of aggregation. The term would be 6-months for sweet, general sour, and asphaltic sour packages, offered in two bidding events during Phase 1, covering October 1998 through March 1999, and April 1999 through September 1999. MMS/Wyoming would have the right to reject any bids.

The royalty sales would be announced in the Federal Register and in trade journals, directing interested purchasers to the MMS Home Page to obtain sale details, including



properties, term, terms and conditions, and bid basis For each RIK property, the following information is to be provided by bid package on the Home Page: property name/location, current operator, average daily production, crude oil quality, current crude movement (pipeline or trucked), and current pipeline or trucking firm. The following schedule would be used:

Phase 1a: Sweet, General Sour, Asphaltic Sour  
Term: 6 months  
Solicit Bids: July 1, 1998  
Receive Bids: August 1, 1998  
Select Bids: August 15, 1998  
Notify Lessees/Operators/Winning Bidders: August 15, 1998  
Implement Phase 1a: October 1, 1998

Phase 1b: Sweet, General Sour, Asphaltic Sour  
Term: 6 months  
Solicit Bids: January 1, 1999  
Receive Bids: February 1, 1999  
Select Bids: February 15, 1999  
Notify Lessees/Operators/Winning Bidders: February 15, 1999  
Implement Phase 1b: April 1, 1999

The solicitations would be structured differently depending on crude oil quality. For Wyoming sweet, bids are to be requested to be made as a fixed increment/decrement from the WTI posted price at Cushing, Oklahoma, plus Platt's P+ trade month average for the month of delivery (to further assure market sensitive pricing). For general sour and asphaltic sour, bids are to be requested to be made as a fixed increment to an average of the following local postings: TTTI, EOTT, Scurlock Permian, Conoco, and Koch.

Bids will be assessed relative to current royalty receipts for each property. All bids that do not at least realize current revenue levels will be rejected. These properties will stay on the current royalty system, until the next project phase. Specifically, for a 12-month period ending June 1998, MMS will determine the relationship between royalty receipts and the average of the five sour postings for each property and month. This relationship will be in the form of a delta or difference between the two data points for each property/month. Bids will be compared against this delta for each month and for the entire term. For Wyoming sweet, royalty receipts will be compared to WTI posting at Cushing plus Platt's P+ data.

The terms and conditions of the sales offerings will also be posted to the MMS Home Page, and will include provisions for payment, financial responsibility/capability, term, imbalances, passage of title, force majeure, and documentation. The purchaser will be required to take all royalty oil transferred by the operator at the delivery point. Title and risk of loss will pass to the purchaser at the delivery point.

## 2. **Marketing Agent Sales**

The second phase of the Wyoming Pilot will utilize marketing agents to receive, transport, and sell royalty volumes. We expect to retain three marketers, one each for the three types of Wyoming crude oil. The term will be for 1 year with a 1 year extension possible. The marketing agents' services will be procured via an RFP process. MMS will retain the right to reject all proposals.

The marketing agent procurement will be announced in the Federal Register, Commerce Business Daily, and trade journals. The same details as described above regarding property characteristics will be posted to the MMS Home Page. The schedule is:

Phase 2: Sweet, General Sour, Asphaltic Sour  
Term: 1 Year  
Solicit Bids: July 1, 1999  
Receive Bids: August 1, 1999  
Select Bids: August 15, 1999  
Notify Lessees/Operators/Winning Bidders: August 15, 1999  
Implement Phase 2: October 1, 1999

The entire sweet, general sour, and asphaltic sour packages will be the royalty volumes subject to the procurement of the three separate marketing agents. For example, the winning contractor to market Federal royalty volumes of general sour would dispose of all royalty volumes in the general sour package. The marketer would take delivery at the royalty meter and exercise professional judgment to choose the best marketing/sales method, including lease sales, outright physical sale, trade, or exchange. Similar to the Alberta program, marketers with any affiliation with a refinery will be excluded from consideration. The marketers' would negotiate and pay transportation to the sales point. Title would belong to the U.S. until the marketers sell the production. The contract parameters are still under development, however, two conceptual contract structures are apparent at this time:

- o Guaranteed Minimum Plus Percentage of Actual Proceeds: MMS would be paid a monthly minimum price, established as a premium above postings (both sour grades) or WTI Cushing (sweet) during the procurement. The marketers' downstream sales proceeds that are over and above an amount necessary for the marketer to transport and trade/sell the production would then be shared with the U.S. We envision an incentivized contract structure that provides more marketer profit with increasing sales proceeds. The bid variables would be the minimum price and the percentage of profits shared with the U.S.
- o Actual Proceeds Less Costs and Fee: The marketer would transport and sell Federal royalty volumes and would pay MMS a monthly payment consisting of gross proceeds received less costs of transporting and selling less a marketing fee. The sole bid variable would be the marketing fee.

During contract development, MMS will solicit ideas to define sales proceeds in a manner that avoids tracing purely Federal royalty volumes through the myriad downstream transactions from many sources. MMS will also develop contract language and structures that address how payment of marketer fees and transportation can occur within current appropriations law.

**Reporting and Verification.** Production reporting will not change during the Wyoming Pilot - operators will continue to report the Monthly Report of Operations (MMS-3160 or MMS-4054). Fiscal reporting will be simplified to the maximum extent possible using available computers, software, and processes. Purchasers will be required to report royalties monthly via an MMS-supplied spreadsheet in Microsoft Excel format that will be populated with basic information on project properties. For each property, the purchaser will be required to fill out only a handful of data items, including royalty volume received, unit price, and total sales value. Post-reporting period adjustments may be needed, although they are not expected to be numerous. The Excel file will use the basic data supplied by MMS and the purchaser to automatically complete an MMS royalty report that can be internally uploaded to RMP's system upon transmittal with corresponding payment to MMS. Attachment 5 shows the full Excel spreadsheet for a project property (the purchaser/agent would only fill out the box in the upper left of the form).

Verification will occur by two methods:

- o Production/royalty report comparisons: This method, an existing RMP process, is designed to compare data reported by operators and purchasers. Discrepancies will first be pursued with operators, as they are responsible for tendering royalties (volumes in this case) to the U.S. Operators will be requested to verify volumes and dispositions. Purchasers will be contacted if operator-supplied information indicates a proper tendering of royalty volumes by operators.
- o Investigation of Operator Production Records: BLM and MMS will periodically sample operator records on production volumes and allocation of volumes to working and royalty interests. Any anomalies will be pursued with the operators.

**Evaluation of the Pilot.** The Pilot will be evaluated both in terms of the information gained on RIK methods, and the financial results.

- o **RIK Information:** Bids, revenues, and operational characteristics of the Pilot will be assessed in relation to the factors being tested (outlined previously in this document). For example, for marginal-producing properties, we will try to answer the following types of questions: 1) what is the relationship between production level and bids/revenues received? 2) are there any special operational problems or characteristics of marginal producing wells? 3) is there a relationship between property location vis-a-vis pipeline systems and bids/revenues? 4) are there unique transportation requirements for small producing wells? Similar issues will be assessed for pipeline/trucked properties, different quality grades,

and other factors.

Administrative costs that MMS incurs during the Pilot will be qualitatively assessed through approximate comparisons with the amount of review and oversight of royalty payments under in value and in kind systems. Under any lease sales phase, auditing is assumed to be minimal, while an undetermined amount of marketing agent audits will occur during a marketing agent sales phase.

- o Financial Results: The revenues received during the different project phases will be compared against themselves, and will also be compared against the revenues received under current "in value" royalty system for the most comparable leases in the same areas. Market changes will be factored into any comparisons between sales periods.

## **ISSUES AND OPTIONS FOR RESOLUTION**

There are two outstanding issues needing resolution at this point in the design process for the Wyoming Pilot: 1) sales methods, and 2) organizational location/nature of internal operations of the RIK project(s).

**Sales Methods.** After meeting with numerous producers, marketers, and refiners of Wyoming crude oil, the team concludes that it is simply not clear whether selling Wyoming crude oil at the lease or retaining a marketing agent would provide more revenue receipts. It is not possible to determine which of these two methods would be more successful without actual testing. Thus, our recommendation is to test both methods.

It is useful to identify the potential benefits and drawbacks of both methods.

### **o Lease Sales**

- Benefits:
1. Consistent with industry practice: marketing agents are rare
  2. Administratively straightforward: no tracing or transportation
  3. Avoids marketer fees
  4. Can implement without rule
  5. Can test effect of aggregation by offering large packages
  6. Can also identify lease by lease values
  7. May be best method under "long supply"/slim margins

- Drawbacks:
1. Does not test potential downstream enhancements
  2. May/may not enhance value: Much royalty paid on lease sales

### **o Marketing Agent Sales**

- Benefits:
1. Tests potential for downstream enhancement
  2. May be best method when margins are large
  3. May test aggregation effect better than lease sales

- Drawbacks:
1. May be complex: tracing of proceeds, transportation, etc.
  2. Can't implement without rule, delaying start of Wyoming Pilot
  3. Incurs marketer fees

A hybrid sales method is possible. MMS could offer the total volume of each of the three RIK packages for sale at the lease (that is, no lease-by-lease sales) with an increment to be bid to account for downstream proceeds. The increment could be expressed simply as a fixed percentage of the lease sale price that would theoretically account for marketers' willingness to share downstream proceeds. However, the only difference between this option and lease sales may be in a perception rather than reality of downstream involvement.

Although we recommend conducting lease sales followed by marketing agent sales, the following options seem to be available for consideration:

- o Option 1: Phase 1 - Hybrid Sales Method; Phase 2 - Marketing Agent Sales
- o Option 2: Marketing Agent Sales Only; Begin in April 1999
- o Option 3: Concurrent Lease/Marketing Agent Sales; Begin in April 1999

We believe that the most meaningful data would be captured by conducting both lease and agent sales in consecutive time periods. However, we will not proceed with any method unless the State of Wyoming concurs and is willing to join the RIK Implementation Team in its design and implementation.

**Project Operations.** A decision is needed on the organizational location of the group that operates the three pilot programs upon implementation. We believe that the group that operates the pilots need to be an ad hoc group that performs this job as a separate, discrete function, so that information on administrative effects can be obtained. It would appear that the RIK Implementation Team is a possibility as is the Royalty Management Program.

Our view is that a separate group within RMP, perhaps the Reengineering Team, is the most appropriate group. However, the RIK Implementation Team should be involved for continuity and to assess the success of the project, relative to its design.

## ATTACHMENT 1

MMS Royalty Marketing Pilot  
Wyoming: Sales Months January - June 1997

		Leases Reporting PC 01 - oil							Leases Reporting PC 02 - condensate					Total Leases Reporting PC 01 & 02				
Basin	County Name	Total Leases	No of Leases	Royalty Quantity	Royalty Value	Royalty bbls/day	Pct of Volume	No. of Leases	Royalty Quantity	Royalty Value	Royalty bbls/day	Pct of Volume	No. of Leases	Royalty Quantity	Royalty Value	Royalty bbls/day	Pct of Volume	
Big Horn	Park	138	136	403,577	\$ 6,502,036	2,230	19.6%	15	204	\$ 3,651	1	0.1%	151	403,781	\$ 6,505,687	2,231	17.6%	
Big Horn	Hot Springs	95	95	178,224	\$ 2,823,802	985	8.7%	2	16	\$ 231	0	0.0%	97	178,240	\$ 2,824,033	985	7.7%	
Big Horn	Washakie	161	156	126,630	\$ 2,147,999	700	6.2%	6	685	\$ 13,014	4	0.3%	162	127,315	\$ 2,161,013	703	5.5%	
Big Horn	Big Horn	109	80	88,343	\$ 1,450,061	488	4.3%	38	2,416	\$ 46,185	13	1.0%	118	90,759	\$ 1,496,246	501	3.9%	
subtotal		503	467	796,774	\$ 12,923,898	4,402	38.7%	61	3,321	\$ 63,081	18	1.4%	528	800,095	\$ 12,986,979	4,420	34.8%	
Powder River	Campbell	1,023	1,007	472,238	\$ 8,693,881	2,609	22.9%	35	1,822	\$ 36,447	10	0.8%	1,042	474,060	\$ 8,730,328	2,619	20.6%	
Powder River	Converse	540	531	136,981	\$ 2,716,167	757	6.7%	15	814	\$ 16,001	4	0.3%	546	137,795	\$ 2,732,168	761	6.0%	
Powder River	Crook	112	112	96,384	\$ 1,326,513	533	4.7%	1	609	\$ 12,350	3	0.3%	113	96,993	\$ 1,338,863	536	4.2%	
Powder River	Johnson	157	157	69,244	\$ 1,242,502	383	3.4%	-	-	\$ -	-	-	157	69,244	\$ 1,242,502	383	3.0%	
Powder River	Niobrara	74	74	15,416	\$ 285,975	85	0.7%	-	-	\$ -	-	-	74	15,416	\$ 285,975	85	0.7%	
Powder River	Weston	391	391	10,354	\$ 211,067	57	0.5%	-	-	\$ -	-	-	391	10,354	\$ 211,067	57	0.5%	
Powder River	Sheridan	13	13	855	\$ 16,538	5	0.0%	-	-	\$ -	-	-	13	855	\$ 16,538	5	0.0%	
subtotal		2,310	2,285	801,472	\$ 14,492,643	4,428	38.9%	51	3,245	\$ 64,798	18	1.3%	2,336	804,717	\$ 14,557,441	4,446	35.0%	
Green River	Uinta	118	39	132,281	\$ 2,958,363	731	6.4%	89	50,008	\$ 693,149	276	20.7%	128	182,289	\$ 3,651,512	1,007	7.9%	
Green River	Sweetwater	447	119	120,797	\$ 2,347,984	667	5.9%	362	57,164	\$ 1,219,919	318	23.7%	481	177,961	\$ 3,567,903	983	7.7%	
Green River	Sublette	279	110	34,400	\$ 751,575	190	1.7%	248	40,588	\$ 890,013	224	16.8%	358	74,988	\$ 1,641,588	414	3.3%	
Green River	Lincoln	252	22	7,623	\$ 169,760	42	0.4%	249	51,027	\$ 885,559	282	21.1%	271	58,650	\$ 1,055,319	324	2.5%	
subtotal		1,096	290	295,101	\$ 6,227,682.00	1,630	14.3%	948	198,787	\$ 3,688,640.00	1,098	82.3%	1,238	493,888	\$ 9,916,322	2,729	21.5%	
Wind River	Natrona	239	219	106,790	\$ 2,025,266	590	5.2%	21	8,807	\$ 175,359	49	3.6%	240	115,597	\$ 2,200,625	639	5.0%	
Wind River	Fremont	78	52	17,681	\$ 334,565	98	0.9%	41	5,200	\$ 101,108	29	2.2%	93	22,881	\$ 435,673	126	1.0%	
subtotal		317	271	124,471	\$ 2,359,831	688	6.0%	62	14,007	\$ 276,467	77	5.8%	333	138,478	\$ 2,636,298	765	6.0%	
Hanna	Carbon	141	43	37,616	\$ 641,323	208	1.8%	101	22,308	\$ 470,135	123	9.2%	144	59,924	\$ 1,111,458	331	2.6%	
Laramie	Albany	5	5	2,140	\$ 36,029	12	0.1%	-	-	\$ -	-	-	5	2,140	\$ 36,029	12	0.1%	
Denver-Julesburg	Laramie	6	6	1,289	\$ 26,286	7	0.1%	-	-	\$ -	-	-	6	1,289	\$ 26,286	7	0.1%	
Grand Total		4,378	3,367	2,058,863	\$ 36,707,692	11,375	100%	1,223	241,668	\$ 4,563,121	1,335	100%	4,590	2,300,531	\$ 41,270,813	12,710	100%	



## ATTACHMENT 2

## Attachment 2

MMS Royalty Marketing Pilot - Wyoming  
 Payors sorted by Royalty Quantity  
 Sales Month: January - June 1997

			Jan-Jun 1997	MMS Royalty			
Payor Name	Sales Quantity	Royalty Quantity	Royalty bbls/day	Cumul bbls/day	Pct of Volume	Cumul Pct	Vol/Payor Equity Vol
Marathon Oil Co. Total	3,206,541	329,016	1,817.8	1,817.8	14.4%	14.4%	2,877,525
MMS Royalty Volume							2,282,236
Amoco Prod. Total	2,496,035	214,659	1,186.0	3,003.7	9.4%	23.8%	2,281,376
Texaco Inc. Total	2,025,355	192,719	1,064.7	4,068.5	8.4%	32.3%	1,832,636
Eighty-Eight Oil Total	1,445,572	162,758	899.2	4,967.7	7.1%	39.4%	1,282,814
Chevron USA Total	1,138,370	161,060	889.8	5,857.5	7.1%	46.5%	977,311
Exxon Co. USA Total	940,370	118,587	655.2	6,512.7	5.2%	51.7%	821,783
Citation O&G Total	1,065,164	117,411	648.7	7,161.4	5.1%	56.8%	947,753
Bass Enterprises Total	760,169	89,084	492.2	7,653.6	3.9%	60.7%	671,085
Enron O&G Total	833,983	82,124	453.7	8,107.3	3.6%	64.3%	751,860
Devon Energy Corp. Total	725,306	73,500	406.1	8,513.4	3.2%	67.5%	651,806
Snyder Oil Co. Total	649,119	67,472	372.8	8,886.1	3.0%	70.5%	581,647
Hunt Oil Co. Total	510,268	58,286	322.0	9,208.2	2.6%	73.0%	451,982
Merit Energy Total	472,921	53,079	293.3	9,501.4	2.3%	75.4%	419,842
Conoco Inc. Total	365,915	44,383	245.2	9,746.6	1.9%	77.3%	321,533
Westport O&G Total	330,652	28,849	159.4	9,906.0	1.3%	78.6%	301,804
Scurlock Permian Total	225,073	27,885	154.1	10,060.1	1.2%	79.8%	197,189
Wexpro Co. Total	215,309	26,914	148.7	10,208.7	1.2%	81.0%	188,395
Union Pacific Res. Co. Total	184,840	25,261	139.6	10,348.3	1.1%	82.1%	159,579
JN Exploration Total	251,026	24,750	136.7	10,485.1	1.1%	83.2%	226,276
Cabot O&G Corp. Total	166,057	20,933	115.6	10,600.7	0.9%	84.1%	145,124
Big West O&G Total	166,440	19,988	110.4	10,711.1	0.9%	84.9%	146,452
Mercury Exploration Total	182,406	16,840	93.0	10,804.2	0.7%	85.7%	165,566
Equitable Res. Total	149,884	15,579	86.1	10,890.3	0.7%	86.4%	134,304
Costilla Petro. Total	119,871	14,900	82.3	10,972.6	0.7%	87.0%	104,971
KCS Mountain Res Total	122,175	13,897	76.8	11,049.4	0.6%	87.6%	108,278
McMurry Oil Total	97,473	12,185	67.3	11,116.7	0.5%	88.2%	85,288
Samedan Oil Corp. Total	96,171	12,021	66.4	11,183.1	0.5%	88.7%	84,150
Phoenix Prod. Co. Total	90,316	10,309	57.0	11,240.0	0.5%	89.1%	80,007
Frontier Oil & Ref Total	82,296	9,704	53.6	11,293.7	0.4%	89.6%	72,591
Celsius Energy Total	77,147	9,550	52.8	11,346.4	0.4%	90.0%	67,597
Vessels O&G Total	35,949	9,508	52.5	11,399.0	0.4%	90.4%	26,442
Burlington Resources Total	74,431	9,196	50.8	11,449.8	0.4%	90.8%	65,235
Abraxas Petro. Total	69,858	8,732	48.2	11,498.0	0.4%	91.2%	61,126
Phillips Petroleum Total	65,164	8,428	46.6	11,544.6	0.4%	91.6%	56,736
Swift Energy Co. Total	63,706	7,963	44.0	11,588.6	0.3%	91.9%	55,743
Coastal O&G Total	63,582	7,911	43.7	11,632.3	0.3%	92.3%	55,671
Eland Energy Inc. Total	61,750	7,740	42.8	11,675.0	0.3%	92.6%	54,011
Wold Oil Properties Total	92,680	7,664	42.3	11,717.4	0.3%	92.9%	85,017
Barrett Res. Total	48,953	7,154	39.5	11,758.9	0.3%	93.2%	41,799
GLG Energy Total	53,631	6,704	37.0	11,793.9	0.3%	93.5%	46,927
Big West Oil Total	52,276	6,535	36.1	11,830.0	0.3%	93.8%	45,742
Medallion Exploration Total	48,094	6,415	35.4	11,865.5	0.3%	94.1%	41,679
UMC Petroleum Total	49,126	6,111	33.8	11,899.2	0.3%	94.4%	43,015
Yates Petroleum Total	47,306	5,354	29.6	11,928.8	0.2%	94.6%	41,952
Nielson & Assoc. Total	39,190	4,899	27.1	11,955.9	0.2%	94.8%	34,291
Ensign O&G Total	75,629	4,694	25.9	11,981.8	0.2%	95.0%	70,935
Apache Corp. Total	33,158	4,145	22.9	12,004.7	0.2%	95.2%	29,014
HS Resources Total	32,811	4,101	22.7	12,027.4	0.2%	95.4%	28,710
Lantern Petroleum Total	34,304	3,801	21.0	12,048.4	0.2%	95.6%	30,503
Presidio Energy Total	29,305	3,663	20.2	12,068.6	0.2%	95.7%	25,641
Mobil E&P Total	29,458	3,656	20.2	12,088.8	0.2%	95.9%	25,802
Petrogulf Corp. Total	27,618	3,460	19.1	12,107.9	0.2%	96.0%	24,157
Berco Res. Total	26,184	3,273	18.1	12,126.0	0.1%	96.2%	22,911
Plains Petro. Optg Total	24,806	3,154	17.4	12,143.4	0.1%	96.3%	21,653
Burr O&G Total	24,936	3,117	17.2	12,160.7	0.1%	96.4%	21,819
Texon L.P. Total	26,151	3,117	17.2	12,177.9	0.1%	96.6%	23,035
Koch Industries Total	29,855	3,105	17.2	12,195.0	0.1%	96.7%	26,751
Vintage Petroleum Total	23,893	2,987	16.5	12,211.5	0.1%	96.8%	20,906
Tongue River Trading Total	31,572	2,829	15.6	12,227.2	0.1%	97.0%	28,743
BTA Oil Prod. Total	22,224	2,778	15.3	12,242.5	0.1%	97.1%	19,446
Flying J Petro. Total	22,034	2,754	15.2	12,257.7	0.1%	97.2%	19,280

## Attachment 2

MMS Royalty Marketing Pilot - Wyoming  
 Payers sorted by Royalty Quantity  
 Sales Month: January - June 1997

Payor Name	Sales Quantity	Royalty Quantity	Jan-Jun 1997		Pct of Volume	MMS Royalty	
			Royalty bbls/day	Cumul bbls/day		Cumul Pct	Vol/Payor Equity Vol
Western Prod. Co. Total	79,449	2,752	15.2	12,272.9	0.1%	97.3%	76,697
Kaiser-Francis Total	22,707	2,707	15.0	12,287.9	0.1%	97.5%	19,999
DNR O&G Total	41,641	2,644	14.6	12,302.5	0.1%	97.6%	38,997
Forcenergy Inc. Total	23,817	2,545	14.1	12,316.6	0.1%	97.7%	21,272
Enserch Expl. Total	19,303	2,413	13.3	12,329.9	0.1%	97.8%	16,890
NGC Resources Total	18,729	2,341	12.9	12,342.8	0.1%	97.9%	16,388
Panterra Petroleum Total	17,606	2,202	12.2	12,355.0	0.1%	98.0%	15,404
Cross Timbers Inc. Total	16,885	2,111	11.7	12,366.7	0.1%	98.1%	14,775
Samson Res. Co. Total	16,573	2,072	11.4	12,378.1	0.1%	98.2%	14,501
Luff Exploration Total	16,264	2,033	11.2	12,389.3	0.1%	98.3%	14,231
Ballard & Assoc. Total	15,680	1,960	10.8	12,400.2	0.1%	98.3%	13,720
Whiting Petro. Total	13,547	1,693	9.4	12,409.5	0.1%	98.4%	11,854
Halwood Petroleum Total	12,215	1,527	8.4	12,418.0	0.1%	98.5%	10,688
Beren Corp. Total	13,227	1,507	8.3	12,426.3	0.1%	98.6%	11,720
Hanson Op. Co. Total	13,732	1,493	8.2	12,434.5	0.1%	98.6%	12,239
CENEX Total	14,716	1,343	7.4	12,441.9	0.1%	98.7%	13,372
Medallion Petroleum Total	10,671	1,333	7.4	12,449.3	0.1%	98.7%	9,337
Slawson Expl. Total	10,643	1,330	7.4	12,456.7	0.1%	98.8%	9,313
Richardson Optg Total	10,626	1,328	7.3	12,464.0	0.1%	98.8%	9,298
Citgo Petroleum Total	10,557	1,320	7.3	12,471.3	0.1%	98.9%	9,237
JP Oil Co. Total	19,002	1,249	6.9	12,478.2	0.1%	99.0%	17,753
Coastal Corp. Total	9,711	1,214	6.7	12,484.9	0.1%	99.0%	8,497
Anschutz Corp. Total	9,333	1,167	6.4	12,491.3	0.1%	99.1%	8,166
Sinclair Oil Co. Total	11,374	980	5.4	12,496.8	0.0%	99.1%	10,394
Belco Energy Total	7,711	964	5.3	12,502.1	0.0%	99.2%	6,747
OXY USA Total	7,341	918	5.1	12,507.2	0.0%	99.2%	6,424
Headington Oil Total	7,367	896	4.9	12,512.1	0.0%	99.2%	6,471
Sunshine Valley Petro. Total	23,968	825	4.6	12,516.7	0.0%	99.3%	23,143
Neward Corp. Total	15,620	812	4.5	12,521.1	0.0%	99.3%	14,808
Crawley Petroleum Total	6,151	771	4.3	12,525.4	0.0%	99.3%	5,380
Central Res. Inc. Total	7,758	732	4.0	12,529.4	0.0%	99.4%	7,026
Energy Equity Co. Total	5,802	724	4.0	12,533.4	0.0%	99.4%	5,077
Anderson Oil Corp. Total	5,911	689	3.8	12,537.3	0.0%	99.4%	5,222
Ataska Res. Total	14,827	681	3.8	12,541.0	0.0%	99.5%	14,146
First Mineral Prod. Total	6,585	665	3.7	12,544.7	0.0%	99.5%	5,920
Murphy Oil Total	5,937	662	3.7	12,548.3	0.0%	99.5%	5,275
Highland Energy Total	9,622	644	3.6	12,551.9	0.0%	99.5%	8,978
Chemily Mgmt Total	26,262	627	3.5	12,555.4	0.0%	99.6%	25,635
3-G Inc. Total	4,571	571	3.2	12,558.5	0.0%	99.6%	3,999
Petroleum Inc. Total	4,312	539	3.0	12,561.5	0.0%	99.6%	3,773
North Finn Total	10,435	538	3.0	12,564.5	0.0%	99.6%	9,897
Slawson Exploration Total	3,949	494	2.7	12,567.2	0.0%	99.7%	3,456
D'Agostino, Bruno Total	7,106	490	2.7	12,569.9	0.0%	99.7%	6,616
Intoil Inc. Total	3,324	415	2.3	12,572.2	0.0%	99.7%	2,909
Basin Expl. Total	5,332	380	2.1	12,574.3	0.0%	99.7%	4,952
Southwestern Energy Total	2,778	347	1.9	12,576.2	0.0%	99.7%	2,431
Independent Prod Co Total	4,543	342	1.9	12,578.1	0.0%	99.8%	4,201
DCD Inc. Total	4,738	331	1.8	12,579.9	0.0%	99.8%	4,407
Arnell Oil Co. Total	10,993	319	1.8	12,581.7	0.0%	99.8%	10,674
Great Western Drig Total	4,361	310	1.7	12,583.4	0.0%	99.8%	4,051
Merrion O&G Total	2,322	290	1.6	12,585.0	0.0%	99.8%	2,032
Hatcreek Ptnshp Total	2,296	287	1.6	12,586.6	0.0%	99.8%	2,009
Equity Oil Co. Total	2,552	275	1.5	12,588.1	0.0%	99.8%	2,277
Forest Oil Total	2,080	260	1.4	12,589.6	0.0%	99.8%	1,820
Townsend Co. Total	13,586	247	1.4	12,590.9	0.0%	99.9%	13,339
Cody Energy Total	1,928	241	1.3	12,592.3	0.0%	99.9%	1,687
Universal Res. Total	3,171	235	1.3	12,593.6	0.0%	99.9%	2,936
Cook, L D Total	1,447	181	1.0	12,594.6	0.0%	99.9%	1,266
McRae & Henry Ltd Total	2,944	176	1.0	12,595.5	0.0%	99.9%	2,768
German Op. Co. Total	1,294	162	0.9	12,596.4	0.0%	99.9%	1,132
Prima O&G Total	1,293	162	0.9	12,597.3	0.0%	99.9%	1,131
XOIL Inc. Total	1,138	142	0.8	12,598.1	0.0%	99.9%	996

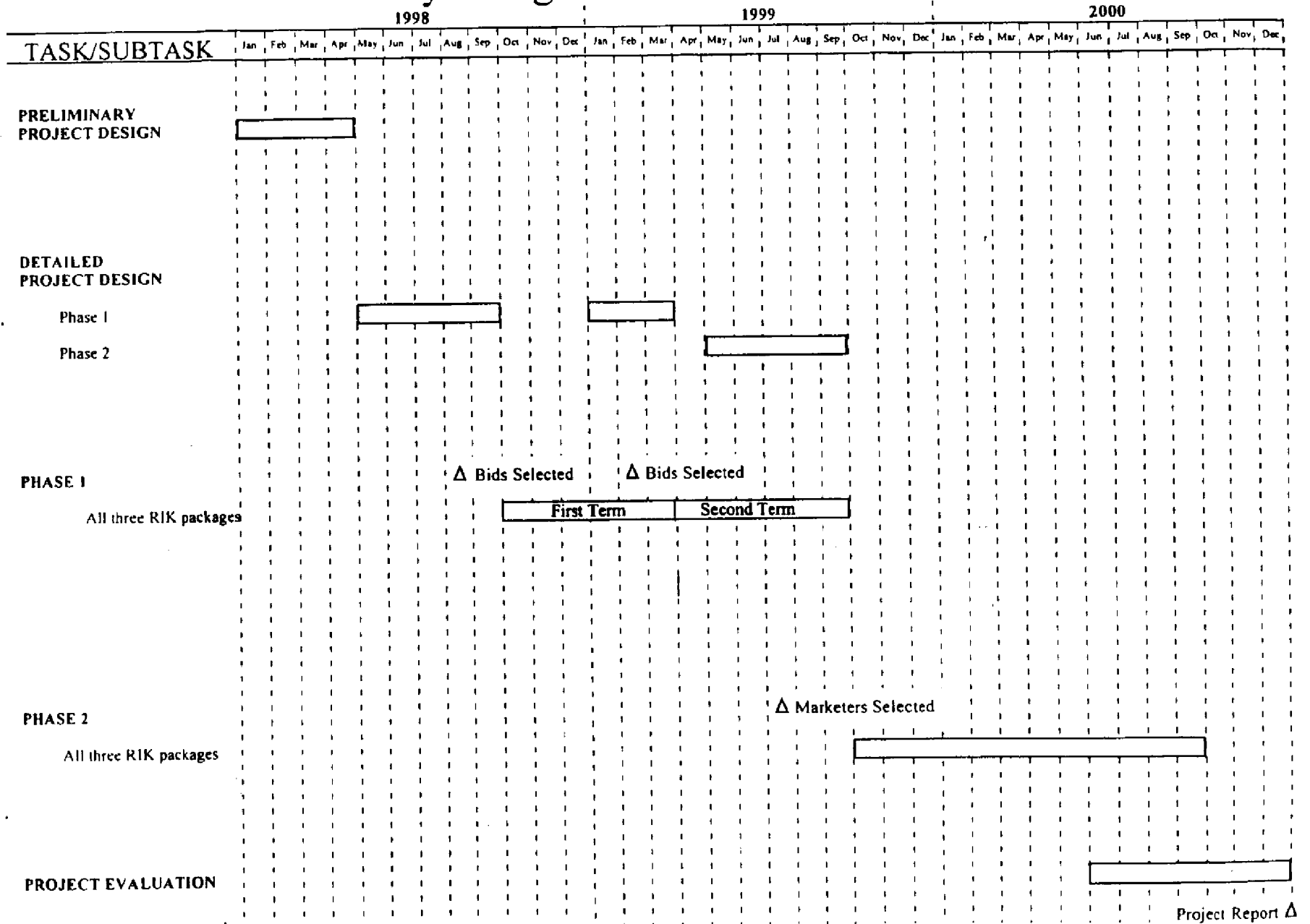
## Attachment 2

MMS Royalty Marketing Pilot - Wyoming  
 Payers sorted by Royalty Quantity  
 Sales Month: January - June 1997

Payor Name	Sales Quantity	Royalty Quantity	Jan-Jun 1997 Royalty bbbls/day	Cumul bbbls/day	Pct of Volume	Cumul Pct	MMS Royalty Vol/Payor Equity Vol
Delta Petroleum Total	676	135	0.7	12,598.8	0.0%	99.9%	540
Continental Optg Total	3,057	133	0.7	12,599.6	0.0%	99.9%	2,925
Havoco Total	974	122	0.7	12,600.3	0.0%	99.9%	852
Prospective Invstmt Total	1,085	112	0.6	12,600.9	0.0%	99.9%	973
Bissell Oil Total	1,913	103	0.6	12,601.4	0.0%	99.9%	1,810
Natural Gas Proc Co Total	763	95	0.5	12,602.0	0.0%	99.9%	668
Underwood, Carl Total	3,240	92	0.5	12,602.5	0.0%	99.9%	3,148
Great Northern Gas Total	1,413	80	0.4	12,602.9	0.0%	100.0%	1,333
Coronado Oil Co. Total	2,692	80	0.4	12,603.4	0.0%	100.0%	2,612
D.C. Dudley Total	636	80	0.4	12,603.8	0.0%	100.0%	557
Thorofare Res. Total	945	77	0.4	12,604.2	0.0%	100.0%	868
Hillcorp Energy Total	1,084	75	0.4	12,604.6	0.0%	100.0%	1,010
Dahill, Murray Total	3,645	73	0.4	12,605.0	0.0%	100.0%	3,573
Benson-Montin-Greer Total	1,110	68	0.4	12,605.4	0.0%	100.0%	1,042
P&M Petroleum Total	1,487	67	0.4	12,605.8	0.0%	100.0%	1,420
Shannon III Total	461	58	0.3	12,606.1	0.0%	100.0%	404
Hallador Petro. Total	438	50	0.3	12,606.4	0.0%	100.0%	388
Herbaly Petro. Total	392	49	0.3	12,606.6	0.0%	100.0%	343
ROCKRVR Total	980	44	0.2	12,606.9	0.0%	100.0%	935
Brown, Tom Inc. Total	343	43	0.2	12,607.1	0.0%	100.0%	300
H & R Oil Total	1,025	42	0.2	12,607.4	0.0%	100.0%	984
R & C Trucks Total	608	37	0.2	12,607.6	0.0%	100.0%	571
Doheny, Patrick Total	270	34	0.2	12,607.8	0.0%	100.0%	236
Wagner & Brown Ltd Total	230	29	0.2	12,607.9	0.0%	100.0%	201
Bristol Res. Total	228	28	0.2	12,608.1	0.0%	100.0%	199
Winkler, L.W. Total	1,064	27	0.2	12,608.2	0.0%	100.0%	1,037
Labarge Minerals Total	172	22	0.1	12,608.3	0.0%	100.0%	151
Beartooth O&G Total	169	21	0.1	12,608.5	0.0%	100.0%	148
Quest Energies Group Total	261	16	0.1	12,608.5	0.0%	100.0%	245
Boggy Creek Total	339	15	0.1	12,608.6	0.0%	100.0%	325
Ant Hills Total	692	15	0.1	12,608.7	0.0%	100.0%	677
Vortex Petroleum Total	116	15	0.1	12,608.8	0.0%	100.0%	102
Marshall & Winston Inc. Total	81	10	0.1	12,608.8	0.0%	100.0%	71
Diverse G.P. Total	80	10	0.1	12,608.9	0.0%	100.0%	70
Duncan Oil Inc. Total	78	9	0.1	12,608.9	0.0%	100.0%	69
Manx Oil Corp Total	339	7	0.0	12,609.0	0.0%	100.0%	332
Termo Co. Total	236	5	0.0	12,609.0	0.0%	100.0%	231
T.H. McElvain O&G Total	18	2	0.0	12,609.0	0.0%	100.0%	16
Guenthart, Wm Total	165	2	0.0	12,609.0	0.0%	100.0%	163
Western Gas Proc. Total	3	0	0.0	12,609.0	0.0%	100.0%	3
Mountain Fuel Supply Total	-	-	-	12,609.0	0.0%	100.0%	-
Shamazoe LTD Total	-	-	-	12,609.0	0.0%	100.0%	-
Teapot Oil & Ref Total	955	-	-	12,609.0	0.0%	100.0%	955
Grand Total	21,287,687	2,282,236	12,609				21,287,687

## ATTACHMENT 3

# Wyoming Crude Oil RIK Pilot



## ATTACHMENT 4

MMS Royalty Marketing Pilot - Wyoming  
Big Horn basin: Target Pilot Agreement and Lease Production  
Asphaltic Sour Crude Oil

Operator	Unit or Field Name	WY Fed Lse	Agre. No.	Lease No.	Basin	County	Location Twp-Rng	1-6/97 Royalty bbls/day	Pipeline	Trucked
Bass Enterprises	South Frisby	6	891012498A		Big Horn	Washakie	47-92	1.5	Marathon	EOTT
Bass Enterprises	South Frisby	2	8970017360		Big Horn	Washakie	47-91	0.3	Marathon	
Bass Enterprises	South Frisby	2	8970017370		Big Horn	Washakie	47-91	1.2	Marathon	
		4	Total in PA's							
Bass Enterprises	South Frisby	1		0483140250	Big Horn	Washakie	47-91	0.3	Marathon	EOTT
Bass Enterprises	South Frisby	1		0490117730	Big Horn	Washakie	47-92	0.1		EOTT
Boelens Well Svc	Wagonhound	1		0640659970	Big Horn	Hot Springs	44-98	0.6		RNC Trucking
Carol Holly Oil	South Frisby	1		0490117740	Big Horn	Washakie	47-92	0.9		Scurlock-Permian
Carol Holly Oil	South Frisby	1		0490595070	Big Horn	Washakie	47-92	2.0		Scurlock-Permian
Carol Holly Oil	South Frisby	1		0490745350	Big Horn	Washakie	47-92	0.3		Scurlock-Permian
Carol Holly Oil	South Frisby	1		0490745360	Big Horn	Washakie	47-92	0.8		Scurlock-Permian
Citation O&G	Little Buffalo	3	892000365A		Big Horn	Park&H Spr	47-100	0.4	Amoco	
Citation O&G	Little Buffalo	5	892000365C		Big Horn	Park&H Spr	47-99+	119.1	Amoco	
Citation O&G	Little Buffalo	5	892000365D		Big Horn	Park&H Spr	47-99+	185.5	Amoco	
Citation O&G	Little Buffalo	8	892000365E		Big Horn	Park	47-100+	58.7	Amoco	
Citation O&G	Little Buffalo	8	892000365F		Big Horn	Park	47-100+	0.2	Amoco	
		11	Total in PA's							
Citation O&G	Enigma	5	W 112017X		Big Horn	Washakie	47-91	70.8	Marathon	
Energy Operating	Harriman	1		064043979A	Big Horn	Park	56-98	4.4		RNC Trucking
Goldmark Eng.	Four Bear	3	8920001610		Big Horn	Park	48-103 +	4.0	Amoco/Express	
Herbaly Petro.	South Frisby	1		0490442550	Big Horn	Washakie	47-91	0.5		Scurlock-Permian
KCS Mtn Res.	Manderson (Mud San)	15	891000333A		Big Horn	Big Horn	50-92	0.8		truck
KCS Mtn Res.	Manderson (Phos)	9	891000333D		Big Horn	Big Horn	50-92	35.6	pipe	
KCS Mtn Res.	Manderson	1		0620377680	Big Horn	Big Horn	50-92	0.04		truck
KCS Mtn Res.	Manderson	1		0620386490	Big Horn	Big Horn	50-92	0.04		truck
KCS Mtn Res.	Manderson	1		0620404560	Big Horn	Big Horn	50-92	1.7		truck
		19	Total in PA's							
Kirkwood O&G	Little Polecat	1		0490492700	Big Horn	Park	57-98	0.4		RNC Trucking
Manx Oil	Waugh Dome	1		0483142750	Big Horn	Hot Springs	44-97	2.0		RNC Trucking
Manx Oil	Waugh Dome	1		0490500720	Big Horn	Hot Springs	44-96	0.4		RNC Trucking
Marathon	Grass Creek (Phos.)	36	8910142000		Big Horn	Hot Springs	46-98 +	25.0	Marathon	
Marathon	Grass Creek	17	891006062A		Big Horn	Hot Springs	46-98 +	14.9	Marathon	
		37	Total in PA's							
Marathon	Pitchfork	2	8920001130		Big Horn	Park	48-102	303.5	Fourbear	
Marathon	Gebo	4	8920003630		Big Horn	Hot Springs	44-95	99.4	Platte	
Marathon	Byron (Mad "A")	12	891002438B		Big Horn	Big Horn	56-97	0.7	Platte	



MMS Royalty Marketing Pilot - Wyoming  
Big Horn basin: Target Pilot Agreement and Lease Production  
Asphaltic Sour Crude Oil

Operator	Unit or Field Name	WY		Lease No.	Basin	County	Location Twp-Rng	1-6/97	Pipeline	Trucked
		Lse	Fed Agre. No.					Royalty bbls/day		
Marathon	Byron (Em-Ten)	1	891012527A		Big Horn	Big Horn	56-97	52.2	Platte	
		12	Total in PA's							
Marathon	Garland (Em-Tn-Md)	2	892000174A		Big Horn	Big Horn	56-97	242.6	Marathon	
Marathon	Kinney Coastal	4	892000185A		Big Horn	BHorn&Park	56-97	13.9	Marathon	
Marathon	Kinney Coastal	4	892000185B		Big Horn	BHorn&Park	56-97+	16.6	Marathon	
Marathon	Kinney Coastal	5	892000185C		Big Horn	BHorn&Park	56-97+	92.5	Marathon	
Marathon	Kinney Coastal	1	892000185E		Big Horn	BHorn&Park	56-98	4.7	Marathon	
Marathon	Kinney Coastal (n/u)	1		0640447690	Big Horn	Big Horn	56-97	0.05	Marathon	
		5	Total in PA's							
Marathon	Kinney Coastal (n/u)	1		0640446940	Big Horn	Big Horn	56-97	0.02	Marathon	
Marathon	Davis	1		0640689070	Big Horn	Hot Springs	44-96	1.6		Scurlock-Permian
Marathon	North Sunshine	1		0640794300	Big Horn	Park	47-101	16.8		Scurlock-Permian
McRae & Henry	Slick Creek	1		0490323650	Big Horn	Washakie	47-92	1.3		Scurlock-Permian
Merit Energy	Hamilton Dome	12	W 138881X		Big Horn	Hot Springs	44-97 +	530.7	Amoco	
Merit Energy	Hamilton Dome	1		0490376970	Big Horn	Hot Springs	44-97	0.2	Amoco	
Merit Energy	Hamilton Dome	1		0490376990	Big Horn	Hot Springs	44-98	3.7	Amoco	
Phoenix Prod.	Little Polecat	1		0480190800	Big Horn	Park	57-98	1.1		RNC Trucking
Phoenix Prod.	Sage Creek	1	8920005340		Big Horn	BHorn & Park	57-97	3.4		RNC Trucking
Phoenix Prod.	Sage Creek	1		0490572170	Big Horn	Big Horn	57-97	0.3	Marathon	
Phoenix Prod.	Sage Creek	1		0640696880	Big Horn	Big Horn	57-97	3.2	Marathon	
Phoenix Prod.	N. Deaver	1		0640781880	Big Horn	Big Horn	57-97	0.1		RNC Trucking
Samson Res.	N. Rattlesnake	1		049002607A	Big Horn	Washakie	47-92	3.6		Scurlock-Permian
Schneider Oil	?????????	1		049057045A	Big Horn	Big Horn	57-97	0.6		truck
Texaco	South Spring Creek	4	892000279A		Big Horn	Park	49-101	46.7	Four Bear	
Texaco	Black Mountain	5	892000435A		Big Horn	Wash & HS	43-91	67.6	Amoco	
Texaco	Black Mountain	1		0620393210	Big Horn	Wash & HS	43-91	1.5	Amoco	
		5	Total in PA's							
Unicorn Drilling	W. Sage Creek	1		0490801900	Big Horn	Park	57-98	0.2		Marathon
Wagner & Brown	South Frisby	4	8970011950		Big Horn	Washakie	47-91	4.1	Marathon	
Wagner & Brown	South Frisby	1		0483200780	Big Horn	Washakie	47-91	5.9	Marathon	
		4	Total in PA's							
Wagner & Brown	South Frisby	1		0490526870	Big Horn	Washakie	47-91	1.3	Marathon	
								2,052.7	bbls/day	
Totals	60 properties		162 leases							

## ATTACHMENT 5

MMS Royalty Marketing Pilot - Wyoming  
Powder River Basin: Target Pilot Agreement and Lease Production  
General Sour Crude Oil

Operator	Unit or Field Name	WY Fed Lse	Agre. No.	Lease No.	Basin	County	Location Twp-Rng	1-6/97 Royalty bbls/day	Pipeline	Trucked
Ballard Petroleum	Victor	8	84686U9910		Powder River	Campbell	54-70	21.8	Belle Fourche	
Ballard Petroleum	Prong Creek West	2	W 119861X		Powder River	Crook	51-68	28.1		Black Hills/JN
Ballard Petroleum	Superhornet	2	W 125262X		Powder River	Campbell	50-71	26.3		Black Hills/JN
Ballard Petroleum	Straag Draw	4	W 126543X		Powder River	Campbell	54-70	0.2		Black Hills/JN
Ballard Petroleum	Victor	1		0490841610	Powder River	Campbell	55-70	0.1		Black Hills/JN
Ballard Petroleum	Wallace North	1		0491110520	Powder River	Campbell	52-70	4.9		Black Hills/JN
Brown Optg	Jackelope	1	W 118942		Powder River	Campbell	53-70	0.5		TTTI
Brown Optg	Shippy	1		0490554070	Powder River	Campbell	53-70	13.2	Belle Fourche	
Brown Optg	Shippy	1		0490927770	Powder River	Campbell	53-70	3.6	Belle Fourche	
C&H Well Svc	Adon North	1		0491011010	Powder River	Campbell	53-72	1.2		Black Hills/88 Oil
Camwest Ltd	Rocky Point	1		0483247030	Powder River	Campbell	57-69	25.7		TTTI
Central Res.	Allison	1		0490683250	Powder River	Campbell	52-70	1.2		TTTI
Citation O&G	Rainbow Ranch	4	8910210630		Powder River	Campbell	49-70 +	8.0	Belle Fourche	
Citation O&G	Cellers Ranch	1		048000436A	Powder River (a	Johnson	44-82	9.5		TTTI
Costilla En.	Candy Draw	6	84687U9500		Powder River	Campbell	53-69	53.8	Belle Fourche	
Duncan Oil	Dry Gulch	4	W 109088X		Powder River	Campbell	49-72	63.4	Belle Fourche	
Eland Energy	Mallard	2	W 132734X		Powder River	Campbell	49-72	31.3	Belle Fourche	
Fancher Oil	North Breaks	1	W 119637X		Powder River	Campbell	52-69	35.9	88 Oil Co.	
Fancher Oil	Ash	3	W 125237X		Powder River	Campbell	52-69	21.5	88 Oil Co.	
Fancher Oil	Hoover Gulch	1		0491182600	Powder River	Campbell	52-69	1.1	88 Oil Co.	
Fancher Oil	Deep Draw-Breaks	1		0491219650	Powder River	Campbell	52-69	3.7	88 Oil Co.	
Fancher Oil	Soda Wells	1		0491289910	Powder River	Campbell	54-70	2.9		88 Oil Co.
H.D. Adams	Camp Creek	1		048046410E	Powder River	Campbell	54-70	12.3	Belle Fourche	
Hunt Oil	Pownall Ranch	10	8910209840		Powder River	Campbell	53-70	43.6	Belle Fourche	
Hunt Oil	Indian Tree	7	W 123878X		Powder River	Campbell	51-70	81.9	Belle Fourche	
Hunt Oil	So. Pownall Ranch	4	W 130891X		Powder River	Campbell	53-70	7.2		TTTI
Hunt Oil	Cellers Ranch	4	W 119864		Powder River (a	Johnson	44-82	4.7		TTTI
Hunt Oil	Cellers Ranch	1		0491020610	Powder River (a	Johnson	44-82	9.2		TTTI
Hunt Oil	Cellers Ranch	1		0491063340	Powder River (a	Johnson	44-82	8.7		TTTI
		4	Total in PA's							
JN E&P	Adon Road	2	W 132741X		Powder River	Campbell	52-70	1.3		TTTI
JN E&P	Bracken	1		0490270420	Powder River	Campbell	52-69	10.4		TTTI
Lario O&G	Hilda	1	W 133833		Powder River	Campbell	52-69	4.5		EOTT
Lario O&G	Deer Fly South	3	W 136878X		Powder River	Campbell	53-70	7.6		EOTT
Lario O&G	Sagebrush	2	W 140441		Powder River	Campbell	53-70	24.5		EOTT

MMS Royalty Marketing Pilot - Wyoming  
Powder River Basin: Target Pilot Agreement and Lease Production  
General Sour Crude Oil

Operator	Unit or Field Name	WY Fed Lse	Agre. No	Lease No.	Basin	County	Location Twp-Rng	1-6/97 Royalty bbls/day	Pipeline	Trucked
McClure Ent.	Roehrs	3	8910141860		Powder River	Campbell	53-70	0.1	88 Oil Co.	
Osborn,Heirs	Little Mitchell Crk	4	8910086440		Powder River	Campbell	52-69	31.7	Belle Fourche	
Osborn,Heirs	Little Mitchell Crk	1		0480193090	Powder River	Campbell	52-69	7.4	Belle Fourche	
Pendragon Energy	Cullums	1		0483113880	Powder River	Campbell	55-73	13.0		88 Oil Co.
Pendragon Energy	N. Wallace	1		0491223410	Powder River	Campbell	52-70	4.4		88 Oil Co.
Plains Petroleum	Bracken	4	84686U9210		Powder River	Campbell	52-69	6.4	Belle Fourche	Black Hills
Plains Petroleum	Cambridge	4	W 125233X		Powder River	Crook	53-68	82.7	Belle Fourche	
Plains Petroleum	North Adon Road	2	W 130885X		Powder River	Campbell	52-70	29.7	Belle Fourche	
Prima Expl.	Dead Horse	1		049056585A	Powder River	Campbell	47-75	2.1		TTTI
Swift Energy	Alpha	3	W 115090X		Powder River	Campbell	51-69	31.5	88 Oil Co.	
TBI Expl.	South Wallace	3	W 129795X		Powder River	Campbell	51-70	48.0	Belle Fourche	
TBI Expl.	Falcon Ridge	3	W 115054X		Powder River	Campbell	50-71 +	6.9	Belle Fourche	
True Oil	Camp Creek	1	4940000590		Powder River	Campbell	54-71	1.3	Belle Fourche	
True Oil	Camp Creek	2	4940002050		Powder River	Campbell	54-70	3.7	Belle Fourche	
True Oil	Gibbs	2	W 106845X		Powder River	Campbell	52-69	15.7	Belle Fourche	
True Oil	Little Mitchell Creek	1		0480421870	Powder River	Campbell	52-69	3.1	Belle Fourche	
True Oil	Camp Creek	1		0480436230	Powder River	Campbell	54-71	0.1	Belle Fourche	
UMC Petro.	Winter Draw	5	W 115064X		Powder River	Campbell	49-70	101.1	Belle Fourche	
UMC Petro.	Wolf Draw	5	W 115093X		Powder River	Camp/Crook	52-68	33.5	Belle Fourche	
Westport O&G	Bone Pile unit	6	84686U9840		Powder River	Campbell	48-73	8.5	Koch	
Westport O&G	Reno	4	891008642A		Powder River	Johnson	44-79+	24.7	Conoco	
Westport O&G	Reno East	1		0480715930	Powder River	Johnson	45-79	2.6	Conoco	
Yates Petro.	Recluse	4	W 127626X		Powder River	Campbell	56-74	25.6	88 Oil Co.	
Totals	57 properties		145 leases					1,057.6	bbls/day	

(a) Crude classified as asphaltic sour but marketed as general sour

## ATTACHMENT 6

MMS Royalty Marketing Pilot - Wyoming  
Powder River Basin: Target Pilot Agreement and Lease Production  
Wyoming Sweet Crude Oil

Operator	Unit or Field Name	WY Fed Lse	Agre. No.	Lease No.	Basin	County	Location Twp-Rng	1-6/97 Royalty bbbls/day	Pipeline	Trucked
Aexco Petro.	Pleasant Dale	1	6910003610		Powder River	Campbell	47-73	0.3		truck
Aexco Petro.	????????	1		0483154700	Powder River	Campbell	47-74	0.2		truck
Aztec Gas & Oil	Pumpkin Creek	2	W 136880		Powder River	Johnson	47-76+	0.2		Black Hills/88Oil
Ballard Petroleum	Gaither Draw	1		0491295230	Powder River	Campbell	48-73	1.6		Black Hills/JN
Berenergy Corp	Empire	1		0483013790	Powder River	Campbell	47-76	0.6	Belle Fourche	EOTT
Berenergy Corp	Empire	1		0490291680	Powder River	Campbell	47-76	0.4		
Berenergy Corp.	Empire	1		049032267B	Powder River	Campbell	47-76	3.5	Belle Fourche	
Bluebonnet Energy	Bridge Draw	2	6910003360		Powder River	Campbell	48-75	1.1		TTTI
Central Res.	Gaither Draw	1	W 135370		Powder River	Campbell	47-73	0.5		EOTT
Citation O&G	Triangle Unit	16	8910181480		Powder River	Campbell	47-75+	27.9	Belle Fourche	Black Hills
Citation O&G	Triangle	1		0491266210	Powder River	Campbell	47-75	1.6		Black Hills
Citation O&G	Triangle	1		0491277940	Powder River	Campbell	47-75+	4.7		Black Hills
Devon	House Creek	44	84687U9690		Powder River	Campbell	43-72	85.2	Belle Fourche	
Devon	North Buck Draw	18	W 106852X		Powder River	Campbell	42-74 +	144.0	Belle Fourche	
Energy Operating	Doe Minnelusa A	1	W 124661X		Powder River	Campbell	48-73	0.2		Koch
Exxon	Hartzog Draw	59	8910194240		Powder River	Camp&John	45-75 +	529.3	Belle Fourche	TTTI
Flying J O&G	House Creek West	1		0483254870	Powder River	Campbell	42-71	0.5		EOTT
Flying J O&G	Empire	1		0490322670	Powder River	Campbell	47-76	0.5		EOTT
Flying J O&G	House Creek West	1		0490374970	Powder River	Campbell	42-71	1.6		EOTT
Flying J O&G	House Creek West	1		0490391800	Powder River	Campbell	42-71	1.2		EOTT
Independent Prod. Co.	House Creek So.	2	8970010450		Powder River	Campbell	42-71	0.2		EOTT
Independent Prod. Co.	Wildcat	1		0491290400	Powder River	Johnson	48-76	0.3		EOTT
JN E&P	Phoenix	1		0490302530	Powder River	Johnson	47-77	1.2		TTTI
Kaiser-Francis	Empire	1		0490352160	Powder River	Campbell	47-76	2.2		88 Oil Co.
M&K Oil	House Creek (Tur)	1	6910006120		Powder River	Campbell	43-71	0.004		TTTI
M&K Oil	House Creek	1	6910006170		Powder River	Campbell	43-71	0.1		TTTI
M&K Oil	House Creek (Sus)	1		0500299410	Powder River	Campbell	42-71	0.2		TTTI
Martin Oil Co	Bridge Draw	1		0490434090	Powder River	Campbell	48-75	0.2		88 Oil Co.
North Finn	Triangle	1		0490809710	Powder River	Campbell	47-75+	0.1		TTTI

MMS Royalty Marketing Pilot - Wyoming  
Powder River Basin: Target Pilot Agreement and Lease Production  
Wyoming Sweet Crude Oil

Operator	Unit or Field Name	WY Fed Lse	Agre. No.	Lease No.	Basin	County	Location Twp-Rng	1-6/97 Royalty bbls/day	Pipeline	Trucked
Northern Prod.	South Deadhorse	1		048040581D	Powder River	Campbell	47-75	0.2		Black Hills
Northern Prod.	South Deadhorse	1		0480415220	Powder River	Campbell	47-75	1.3		Black Hills
Northern Prod.	South Deadhorse	1		048041522A	Powder River	Campbell	47-75	0.3		Black Hills
Northern Prod.	Iberlin	1		0483114020	Powder River	Campbell	46-76	0.9		EOTT
Northern Prod.	Bridge Draw	1		0490457230	Powder River	Campbell	48-75	2.5	Belle Fouché	
Northern Prod.	Black Rock Draw	1		0490464500	Powder River	Campbell	48-75	0.9		Black Hills
Northern Prod.	Black Rock Draw	1		0490612630	Powder River	Campbell	48-75	0.1		Black Hills
Prospective Inv.	Empire/Iberlin	1	6910006500		Powder River	Campbell	47-76	1.0		Black Hills
Prospective Inv.	Empire/Iberlin	1		0490589440	Powder River	Campbell	47-76	2.7		Black Hills
Rim Operating	SW Deadhorse	1		0490664090	Powder River	Campbell	47-75	4.3		EOTT
Stellar Oil	S.W. Deadhorse	1		0490357580	Powder River	Campbell	47-75	4.7		TTTI
TBI Expl.	Heldt Draw "A"	1	8910137460		Powder River	Johnson	45-77	9.5		TTTI
TBI Expl.	Culp Draw	25	8910210760		Powder River	Camp/John	45-76 +	105.2	Belle Fouché	
TBI Expl.	Heldt Draw "B"	2	891013746D		Powder River	Johnson	45-77	3.9		TTTI
TBI Expl.	Table Mountain	26	W 125236X		Powder River	Johnson	44-76	33.7		TTTI
TBI Expl.	Culp Draw (n-u)/Phoenix	1		0482666380	Powder River	Johnson	47-77	1.5		TTTI
TBI Expl.	Culp Draw (non-unit)	1		0490898480	Powder River	Johnson	46-76	3.2		TTTI
TBI Expl.	Culp Draw (non-unit)	1		0490898560	Powder River	Johnson	46-76	1.2		Black Hills
True Oil	21 Mile Butte	1		0490913800	Powder River	Campbell	48-73	6.8		Black Hills
True Oil	21 Mile Butte	1		0491306000	Powder River	Campbell	48-73	3.1		Black Hills
UMC Petro.	Bridge Draw	1	6910002020		Powder River	Campbell	48-75	0.9		TTTI
UMC Petro.	Bridge Draw	1	6910002580		Powder River	Campbell	48-75	0.8		TTTI
UMC Petro.	Bridge Draw	1	6910002860		Powder River	Campbell	48-75	0.6		TTTI
UMC Petro.	Bridge Draw	1	6910002870		Powder River	Campbell	48-75	1.1		TTTI
UMC Petro.	Bridge Draw	1		0490703640	Powder River	Campbell	48-75	1.2		TTTI
Udike Res.	Dead Horse Creek	6	8910085120		Powder River	Campbell	48-75	0.6		88 Oil Co.
Wellstar Corp.	Bridge Draw	2	7810000170		Powder River	Campbell	48-75	2.6		TTTI
Wellstar Corp.	Bridge Draw	1		0490608680	Powder River	Campbell	48-75	2.1		TTTI
Totals	57 properties		249 leases					1,006.3	bb/s/day	

## ATTACHMENT 7



Minerals Management Service / State of Wyoming Royalty Calculation Schedule  
Royalties Reporting and Payment for:

Wolf Draw  
123 Green Tree Street  
Sam City, Wyoming 820003

	Sales Quantity	Royalty Quantity	Royalty Value	Portions
Total MMS Royalties:	8,040	1,005	"X-4"	100.0000%
Total State Royalties:	0	0	\$0.00	0.0000%
Total Royalties:	8,040	1,005	"X-4"	100.0000%

Payor Code:	38083
Payor -Assigned Document Num:	A12345
Contract Number:	12345678B
Delivery Point:	W 115093 X
Federal Royalty Volume:	1,005
Total Royalty Volume:	1,005
API Gravity:	35.60
Percent Sulfur:	0.50
Price:	"X-4"
Report Month (mmyy):	0897
Producing or Sales Date (mmyy):	0797
Selling Arr. Code):	060
Transaction Code:	01
Payment Method Code:	3
Amended Report ? (Y or N):	N
If Y, then Adj. Reason Code:	00

Aid Number	Agency Assigned Lease Number	Revenue Source	Acreage	Unit/Field Name	Tract Percentage	State or Federal Sales Quantity	Royalty Rate	State/Federal Royalty Quantity
State or Fee Leases	State or Fee Leases				0.0000%	0.00	12.5000%	0.00
049-027042-A 002	WYW27042A	002	7.7265	Wolf Draw	1.5088%	121.31	12.5000%	15.16
049-107727-0 001	WYW107727	001	15.4992	Wolf Draw	3.0268%	243.34	12.5000%	30.42
049-108228-0 001	WYW108228	001	5.9086	Wolf Draw	1.1538%	92.77	12.5000%	11.60
049-111729-0 001	WYW111729	001	10.5210	Wolf Draw	2.0545%	165.18	12.5000%	20.65
049-111785-0 002	WYW111785	002	472.4445	Wolf Draw	92.2563%	7,417.41	12.5000%	927.18
Totals			512.0998		100.0000%	8,040.00	12.5000%	1,005.00